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PERKIN-ELMER

OPTICAL GROUP NORWALK, CONNECTICUT

ENGINEERING REPORT NO. 8804A

FINAL REPORT

INTEGRATION OF THE BLOCK INTERFEROMETER, THE DALMO-VICTOR AC RADIOMETER, AND THE IMAGE ORTHICON AND TRACKING GATE SYSTEM INTO THE GLOW SYSTEM

DATE: SEPTEMBER 5, 1967

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REDSTONE ARSENAL, ALABAMA

CONTRACT NO. DAA-H01-67-C-0069

SPONSORED BY:
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ARPA ORDER NO. 559

Submitted by: _____
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Approved by: _____
Colin H. Durham, Manager Range Instrumentation Section

Approved by: _____
Paul R. Yoder, Jr., Manager Optical Systems Department

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

CONTRACT OBJECTIVE

The purpose of this contract was to provide a program for the integration of various government furnished optical instrumentation into the GLOW System.

SUMMARY

This report, which concludes Perkin-Elmer's efforts under Contract No. DAAK-H01-67-C-0069, defines the work required to integrate the Block Engineering Interferometer, the Palmo-Victor AC Radiometer, and the GLINT Image Orthicon Television System with Tracking Gates, into the GLOW System. The individual tasks for each integration are enumerated. The status of the GLOW system at the close of Perkin-Elmer's effort is also indicated.

SECTION 1

BLOCK ENGINEERING INTERFEROMETER

1.1 INTRODUCTION

The tasks reported here completed Perkin-Elmer's effort in the integration of the Block Engineering Incorporated Interferometer in GLOW system No. 2, now located at Kwajalein atoll in the central Pacific.

Perkin-Elmer's tasks in the integration of the Block Engineering Interferometer consisted of the following:

1.1.1 Fabrication of a boresight base to hold the Block Engineering Interferometer. Perkin-Elmer delivered the base to Block Engineering Incorporated, 385 Putman Avenue, Cambridge, Massachusetts.

1.1.2 Modification and rewiring of rack 2A9 in the GLOW System Instrument Van to provide space for the addition of the Block Engineering Interferometer control console. The wiring in the instrument van was also modified to provide the necessary lines to operate the Block Interferometer. All these wiring changes are contained in the wiring lists in paragraph 1.2.

1.1.3 Fabrication of the RFI shielded cable assemblies that will connect the interferometer to the GLOW mount instrumentation platform outlet plugs. These cable assemblies were delivered to General Electric, Valley Forge, Pennsylvania.

1.1.4 In addition, Perkin-Elmer furnished wire run sheets, a layout drawing of a suggested placement of the interferometer on the instrumentation pedestal, and a print of the boresight base, to Mr. Lloyd Taylor of General Electric Company.

1.2 SUMMARY

Because of the official turnover of the GLOW system to General Electric Company, the Block Engineering Interferometer will not be installed by the Perkin-Elmer field crew. The interferometer will be installed in the GLOW system at Kwajalein by General Electric personnel.

1.3 DETAILED WIRE LISTS

The following figures contain detailed wire lists for the integration of the Block Engineering Interferometer in the GLOW system.

Figures 1, 2, and 3 are the wire lists for the Block Interferometer power plug, signal plug, and recorder plug, respectively.

Drawing numbers X578-0247, X578-0248, and X578-0249 contain the wire lists for the rack (249) of the GLOW instrumentation van. The instrument

van was modified, and connectors were installed to provide the necessary wiring for operation of the Block Engineering Interferometer.

POWER PLUG	Block JBA		TAB P2		DP2		2JB	2J10	1J3	1JB2
Brake	A		55		TB2-40C		BZ			
	B		57		40A		BY			
Spare	C		58		Grounded DP2					
Shield	D									
Spare	E		29		TB2-31C		AZ			21
	G		30		31A		BA			
Spare	F		31		Grounded DP2		BM			Groun
Shield	H		66		TB1-16C			J	TB2-B2	
480 Volts	J		67		16B			h		K3
Spare	M		69		Grounded DP2			i		K4
Shield	K		63		15C			g	TB2-7	
4W/180V/360V	L		64		15A			f		10
240V	A		65		Grounded DP2			e		11
	N									
Generator	E		70		17C			AZ	TB2-10	
Ventilator MTR	T		71		17A			AA		11
			72		Grounded DP2			BB		12
Heater MTR	U		73		19C			AC		1
Cooler	V		74		19A			AD		2
			75		Grounded DP2			BE		3

[illegible] WIRING

J202	1JB6 P15-16	1JB6	J71			[illegible] J103	
22-[illegible]	16[illegible]	TB45-10	7			A	#22
31	16[illegible]	1	R			B	#22
						C	
						D	
21-3	36 [illegible]	31-1	B			E	#22
2	[illegible]	31-2	W			[illegible]	#22
Receptacle ac 1JB2			P			F	
	15-a	31-8	L			H	#[illegible]
	a	8	B			J	#18
	a	17	V			K	
	15-b	TB32-5	G			L	#18
	a	6	R			M	#18
	b	16	B			N	
			P			P	
	15-B	TB3[illegible]-1	S			S	#22
	B	10	O			T	#22
	Y	17	L				
	15-	TB46-1[illegible]	[illegible]			U	#18
	A	16	R			V	#18
	b	8	B				

MS31068-28-19P

BLOCK

[illegible] PLUG	J83		2AV J2		DPJ XJ3		J8E J3	J8	LJ[illegible]	
Spare	K		2		1A		B		[illegible]	2
[illegible]	Q		1		1C		A			1
Shield	B		3				F			3
[illegible]	N		4		2C		H			4
[illegible]	C		5		2A		R			5
Shield	M		6				S			6
[illegible]	J		12		45C-12C		K		3[illegible]	18
[illegible]	M		13		45A 12A		N			19
Shield	K		34				P			20
[illegible]	P		9		11C		G			15
[illegible] 81e187	L		18		11A		D			16
[illegible] Shield	H		28				M			17
[illegible]	S		17		9A		A			9
[illegible] Shield	T		27				P			10
[illegible] DC	U		25		9C		U		3[illegible]	7
Shield	V		26				C			
[illegible]	W		33		19A			HS	3[illegible]	
Shield	V		34							
[illegible]	Z		19		7C		T		3[illegible]	1
[illegible] MS's	b		20		7A		AE			2
Shield	a		21				AL			3
[illegible]	f		22		BC		S			4
[illegible]	j		23		BA		AA			5
[illegible] Shield			24				AM			6
[illegible]	h		7		3C		J		3[illegible]	7
[illegible]	l		8		3A		K			8
[illegible] Shield			16				T			9
[illegible]	k		10		4C		[illegible]			10
[illegible]	l		11		4A		[illegible]			11
[illegible]			12				h			12

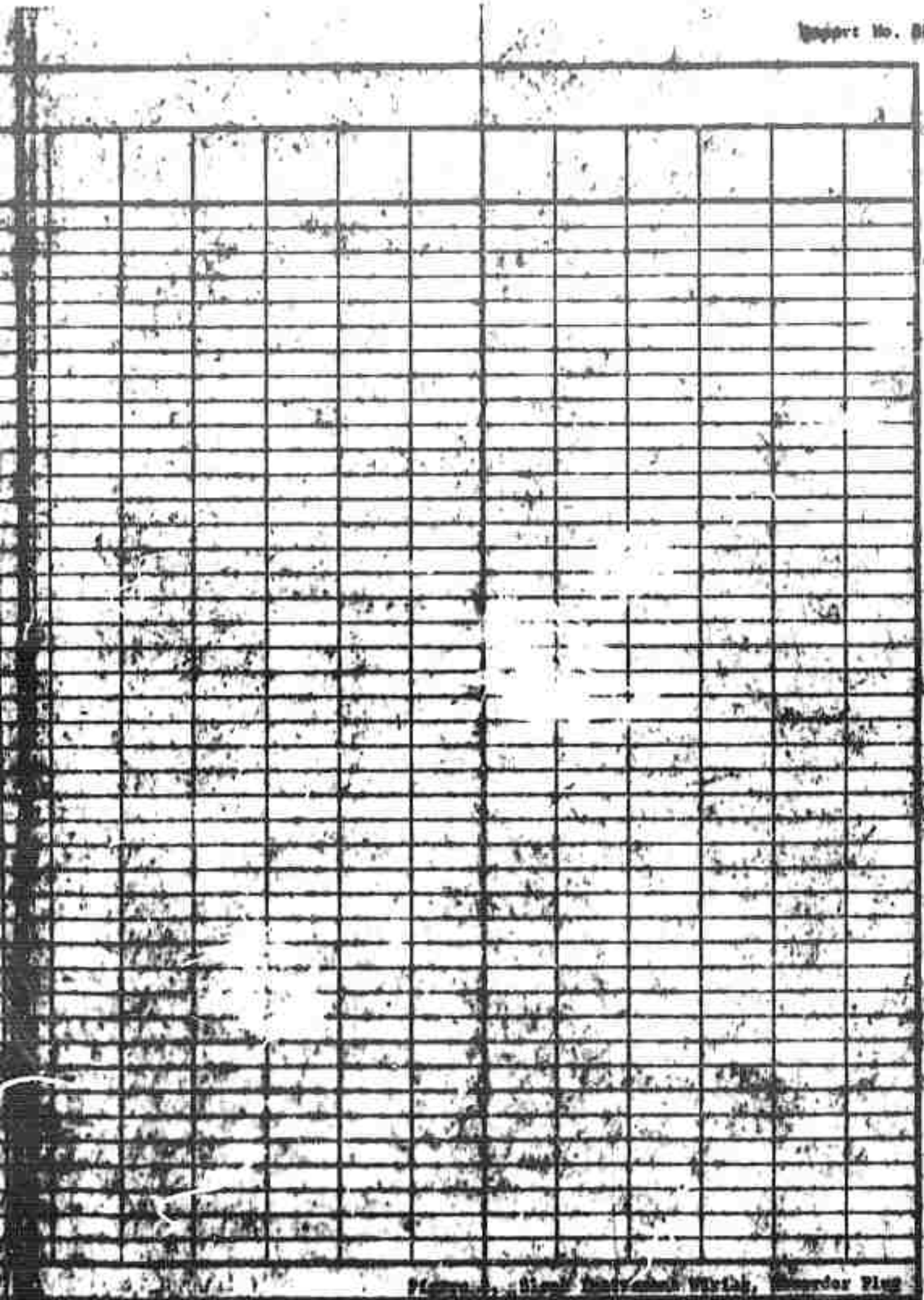
1

[illegible]RATION		MS3106A428-15S										
		J22		BLOCK J101								
12		R		A								
1		C		C								
3		H		D								
4		L		E								
5		R		G								
6		V		F								
18		G		J								
19		J		H								
20		d		K								
15		c		P								
16		h		L								
17		Y		M								
9		P		S								
10		Z		T								
7		O		U								
[illegible]		X		V								
4		T		W								
				v								
1		h		Z								
2		h		b								
3		n		c								
4		N		f								
5		M		g								
6		W										
7		a		h								
8		m		i								
9		j										
10		b		k								
11		r		l								
12		v.										

Figure [illegible] Equipment Wiring, Signal Plug

2

REFERENCE FLOD	Flow J82		2A9 P3		Ra80 P1				
Chip or Tube	A		30		30				
			19		19				
Shield			20		20				
Ambient Temp	C		21		21				
			31		31				
Shield			32		32				
Detector Temp	b		33		33				
			22		22				
Shield			23		23				
Reflometer	E		24		24				
			34		34				
Shield			35		35				
[illegible] Low Gain	F		36		36				
			25		25				
Shield			26		26				
[illegible] - Low Gain	G		1		1				
			9		9				
Shield			10		10				
[illegible] - Hi Gain	H		4		4				
[illegible]	J		12		12				
Shield			13		13				



PERKIN-ELMER

Electro-Optical Division, Norwalk, Connecticut

CABLE 2W3
UNIT A J82 - J3
TERMINATION
UNIT B DP2
UNIT "A" CABLE CONN J02 PIN REDIX
UNIT "B" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO	FUNCTION
J82-J2-A	DP2-TB2-1C	2A9-P2 - 1	20 AWG	SPARE-BLOCK
B	DP2-TB2-1A	- 2	20 AWG	SPARE-BLOCK
H	DP2-TB2-2C	- 4	20 AWG	SPARE-BLOCK
R	-2A	- 5		SPARE-BLOCK
J	-3C	- 7		SPARE-BLOCK
K	-3A	- 8		SPARE-BLOCK
E	-4C	-10		SPARE-BLOCK
	-4A	-11		SPARE-BLOCK
	-5C	-13		
	-5A	-14		
	-6C			
	-6A			
	-7C	-19		THERMISTOR
	-7A	-20		THERMIS. A RTN
	-8C	-22		HEATER
AA	-8A	-23	20 AWG	HEATER RTN
U	-9C	-25	#18	LOW LEVEL DC BLOCK
	-9A	2A9-P2 -17	#18	1KH2 - BLOCK
	-10C	X	20 AWG	
AN	-10A	X		
C	-11C	2A9-P2 - 9		SIGNAL - BLOCK
D	-11A	2A9-P2 -18		0 VOLT/+12/-12/ BLOCK
X	-12C	DP2-TB2-45C		+12 VDC BLOCK
W	-12A	-45A		-12 VDC BLOCK
L	-13C	-46C		
V	-13A	-46A		
X	-14C	X		
Y	-14A			
	-15C			
	-15A			
	-16C			
	-16A			
AF	-17C			
AH	-17A			
AK	-18C			
AM	-18A		20 AWG	
AP	-19C		18 AWG	
AS	-19A		18 AWG	
	-20C		20 AWG	
	-20A			
	-21C			
	-21A			
AV	-22C			
AX	-22A	X		
BA	-23C	2A3-P3 -13		
BC	-23A	2A3-P3 -12		
BE	-24C	X		
BH	-24A	X		
BK	-25C	X		

X TITLE 20 AWG
FOR STATIONS #8 ONLY
SEE 8A PIN #1

DRAWING NO.	REV.	SHEET
8378-0247		

PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

CABLE ZM3 LENGTH 7 FT.
UNIT A JP2 -13
TERMINATION
UNIT B DP2
UNIT "B" CABLE CONN

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO	FUNCTION
JP2-13-BV	DP2-TB2-26G	X	20 AWG WHT	TRR GND
-CD CD	-26A		BLK	TRR GND
CL	-27C		WHT	TRR GND
-CB CM	-27A		BLK	TRR GND
CD	-28C		WHT	TRR GND
-CB CW	-28A		20 AWG BLK	TRR GND
BN	-29C		18 AWG WHT	TRR GND
-BP CH	-29A		18 AWG WHT	TRR GND
-BP BW	-30C		20 AWG WHT	TRR GND
-BP BX	DP2-TB2-30A	X	20 AWG WHT	TRR GND
BN				
DP2-TB2-45C	JUMPER (SEE FG 1)			SYSTEM #1 SYSTEM #2
-45D		2A9-P2 -32		0-10 VDC AZ SIG +12V BLOCK
-45A	JUMPER			
-45B		2A9-P2 -33		0-10 VDC EL SIG -12V BLOCK
-46C	JUMPER			
-46D		2A9-P2 -59		THERMISTOR
-46A	JUMPER			
-46B		2A9-P2 -61		THERMISTOR RTN
SHIELDS →	F, S, T, b, m, AJ, AL, AM, c,		o, AB, BA, H, P, N, i, n, r,	BB, BD, AD, u, J
	AH, BE, BH, BK	BL, CC, CH, CK, CB, BF, CP, CF, BM		
2A9 P2	3, 4, 9, 12, 15, 18, 21, 24,	26, 28		

	TITLE	DRAWING NO.	REV.	SHEET
		X578-0247	B	6 of 30

FORM 2-6268-00

PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

8 FT
UNIT A — JP2 - J4
TERMINATION
UNIT B — DP2
UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN.

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
JP2-J8-b	DP2-TB4-23B		20 AWG Wh	SPARE (Ter Gnd)
B	32A		Blk	SPARE (Ter Gnd)
ME	33C	2A9-P2-35	Wh	+28V SENSOR
BV	33A	36	Blk	-28V SENSOR
CL	34C	39	Wh	THERMISTOR
CH	34A	2A9-P2-40	Blk	THERMISTOR RTN
CG	35C		Red	Ter Gnd
CF	35A		Wh	Ter Gnd
CN	36A		20 AWG Blk	Ter Gnd
BC	36C	2A9-P2-41	[illegible] Wh	Gnd (Vam)
BD	37A	43		Gnd (113)
BL	37C	45		Gnd
BF	38C	47	16 AWG	+28V DC Regulator
BH	38A	49		+28V DC Regulator 4 & 5
BP	39C	52		Carrier Check Common
BR	39A	53		LAMP DRIVE - BLOCK
BZ	40C	55	22 AWG	SPARE - BLOCK
BX	40A	2A9-P2-37		SPARE - BLOCK
CA	41C			
CB	41A			
CR	42C			Ter Gnd
CJ	42A		Wh	
BR	42C			
AZ	31C	2A9-P2-29		SPARE-BLOCK
BA	31A	2A9-P2-32		SPARE-BLOCK
SHIELDS —	P, AH, L, H, M, f, AG, AM, B, W, d, T,			BM, BM, CD, CS
2A8-J1 (75-69-78-77)				
2A8-J3 (50-52)				
2A9-J2 (31-34-37-40-42-44-46-48-50-52-54-56-58-60-62-29-30				

	TITLE	DRAWING NO.	REV.	SHEET
	SYSTEM #2 CKLT #2B SYSTEM #1 SEE 15A	8578-0247		15B of 30

PERKIN-ELMER
Electro-Optical Divis[illegible], Norwalk, Connecticut

UNIT A CABLE 2W10 5 FT
TERMINATION JP2 - J10 (Inst. Pwr)
UNIT B
UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO	FUNCTION
JP2-J10-A	16 AWG Wh	DP3-TB4-2C	2A9-P1-51	20 FPS MOTOR
B	16 Blk	2A	52	20 FPS MOTOR
F				SHIELD
H	20 Wh	DP3-TB1-2C	54	10 FPS MOTOR
R	Blk	2A	53	10 FPS MOTOR
S				SHIELD
U	Wh	DP4-TB1-3C		SPARE
C				SHIELD
d	Wh	3A	59	CALIB LAMP
P				SHIELD
Q	Wh	4C	60	CALIB LAMP RTN
AB				SHIELD
AM	20 Wh	4A	62	120V 400 CPS ϕA
BA				SHIELD
J	16 Wh	DP3-TB4-3B	2A9-P1-75	MOTOR DRIVE ϕA
K	16 Blk	3B	2A9-P1-76	CHASSIS GRD
[illegible]				SHIELD
S	16 AWG Wh	DP2-TB1-6C	2A9-P1-48	10 FPS MOTOR
a	Blk	6A	49	10 FPS MOTOR
k			50	SHIELD
h	Wh	7C	2A9-P1-67	400 C.P.S. NEUTRAL
m	Blk	7A	2A9-P1-68	400 C.P.S. NEUTRAL
B				SHIELD
N	Wh	8C	2A9-P1-72	SHUTTER CORR LAMP
R	Blk	8A	2A9-P1-73	SHUTTER CORR LAMP
AJ				SHIELD
T	Wh	9C	2A9-P1-64	ϕA-C 400 CPS SERVO PWR
AK	Blk	9A	2A9-P1-65	R T N
AL				SHIELD
E	Wh	10C		SPARE
AA	16 AWG Blk	10A		SPARE
AN				SHIELD
C	16 Wh	11C	2A8-P3-43	SPARE
D	Blk	11A	2A8-P3-44	
M				
N	Wh	12C	2A8-P3-46	
H	16 Blk	12A	2A8-P3-47	
P				
L	18 Wh	13C		
V	Blk	13A		
W				
X	Wh	14C		
Y	Blk	14A		
[illegible]				
f	Wh	15C	2A9-P2-63	0V/180V/360V/BLOCK
r	18 Blk	15A	2A9-P2-64	+ 180V DC BLOCK
n				

TITLE
STATUS: 02 ONLY
SEE 18A FOR 01

DRAWING NO. 2578-0267 | REV. | SHEET 18B of 30

PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

CABLE & WIR
UNIT A JP2-J10
TERMINATION
UNIT B
UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN.

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
JP2-J10-a	18AWG Wh	DP2-TB1-16C	2A9-P2-66	+100 VDC - BLOCK
b	Blk	16A	2A9-P2-67	PARE
t				
AD	Wh	17C	2A9-P2-70	THERMISTOR - BLOCK
AR	Blk	17A	2A9-P2-71	THERMISTOR RTN BLOCK
BB				
AS	Wh	18C		TER GND
BC	18AWG Blk	18A		TER GND
BD				
AT	16 AWG Wh	19C	2A9-P2-73	COOLER RTN BLOCK
AU	16 Blk	19A	2A9-P2-74	COOLER BLOCK
BK				
AV	Wh	20C	2A4-P3-40	Camera Motor 115V (A)
AW	Blk	20A	2A4-P3-41	Rtn
BH				
AX	Wh	21C	2A4-P3-36	Future ØB 115V (A)
BJ	16 Blk	21A	2A4-P3-43	Future ØC 115V (A)
BK				
AY	20 Wh	22C		TER GND
AZ	20 Blk	22A		TER GND
BL				
BT	16 Wh	23C	2A4-P3-37	Camera Motor 115V (B)
BU	16 Blk	23A	2A4-P3-38	Rtn
CC				
AC	18 Wh	24C		PII Htr Rtn
AD				
AE	18 AWG Wh	24A		Tracer Spare (Ter Gnd)
M				
	20 AWG Wh	41C		TER GND
AF	Wh	41A		
AH				
BV	Wh	42C		TER GND
CG	Blk	42A		TER GND
CH				
CJ	Wh	43C		TER GND
CK	Blk	43A		TER GND
CL				
CR	Wh	44C		TER GND
CK	Blk	44A		TER GND
CM				
AS	Wh	45C		TER GND
BP				
CN	20 Wh	45A		TER GND
BVP				
BK	18 Wh	46C		
CP				
AR	20 White	46A		TER GND
BR				

TITLE
SYSTEM #2 D.S.;
SEE 19A FOR #1

DRAWING NO. X578-0247 | REV. | SHEET 198 of 20

PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

UNIT A 2 A9 - P2
TERMINATION
UNIT B DP2 - TB1 - 2
UNIT "B" CABLE CONN

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG.	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
2A9-P2-1	#22		DP2-TB2-1C	SPARE - BLOCK
2			1A	SPARE - BLOCK
3	SHIELD		TERM	
4	#22		2C	SPARE - BLOCK
5			2A	SPARE - BLOCK
6			TERM	
7			3C	SPARE - BLOCK
8			3A	SPARE - BLOCK
16	SHIELD		TERM	
10	#22		4C	SPARE - BLOCK
11			4A	SPARE - BLOCK
12	SHIELD		TERM	
13	#22		5C	
14			5A	
15	SHIELD		TERM	
9	#22		11C	0 VOLT/+12/-12/BLOCK
18			11A	SIGNAL
28	SHIELD		TERM	
19	#22		7C	THERMISTOR - BLOCK
20			7A	THERMISTOR RTN - BLOCK
21	SHIELD		TERM	
22	#22		8C	HEATER - BLOCK
23			8A	HEATER RTN - BLOCK
24			TERM	
25	#18		9C	LOW LEVEL DC - BLOCK
26	SHIELD		TERM	
17	#18		9A	1K M2 - BLOCK
27	SHIELD		TERM	
28	#22		31C	SPARE - BLOCK
30			31A	SPARE - BLOCK
31	SHIELD		TERM	
32	#22		45B	+12V DC BLOCK
33			45B	-12V DC BLOCK
34	SHIELD		TERM	
35	#22		33C	SPARE
36			33A	
37	SHIELD		TERM	
38	#22		34C	
40			34A	
51	SHIELD		TERM	
41	#20		36B	
A2	SHIELD		TERM	
A3	#20		37A	
A4	SHIELD		TERM	
A5	#20		37C	
A6	SHIELD		TERM	
A7	#20		36C	
A8	SHIELD		TERM	
A9	#20		DP2-TB2-30A	
39	SHIELD		TERM	

FOR STUF #2 THRU
USE #40A FOR #1 RUN

DRAWING NO.	REV.	SHEET
X578-0248		40B of 61

PERKIN-ELMER
Electro-Optics Division, Norwalk, Connecticut

UNIT A 2A9 - P2
TERMINATION
UNIT B DP2 - TB1 - 2
UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO	FUNCTION
2A9-P2-52	20 AWG		P2-XP3-39S	
62	SHIELD		TERM	
53	#20		39A	LAMP DRIVE - BLOCK
54	SHIELD		TERM	
55	#22		40C	SPARE - BLOCK
56	SHIELD		TERM	
57	#22		40A	SPARE - BLOCK
58	SHIELD		TERM	
59	#22		46B	
60	SHIELD		TERM	
61	#22		46A	
62	SHIELD		TERM	
63	#20		DP2-TB1-15C	0 VOLTS/180V/360/-BLOCK
64	#20		15A	+180 VOLTS - BLOCK
65	SHIELD		TERM	
66	#22		16C	+360 VOLTS - BLOCK
67	#22		16A	SPARE - BLOCK
68	SHIELD		TERM	
70	#20		17C	THERMISTOR - BLOCK
71	#20		17A	THERMISTOR - RTN - BLOCK
72	SHIELD		TERM	
73	#20		19C	COOLER RTN - BLOCK
74	#20		19A	COOLER - BLOCK
75	SHIELD		TERM	
76	SHIELD			
77	SHIELD			
78	SHIELD			
2A9-P2-50	SHIELD			

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FOR SYSTEM #2 ONLY FOR #3 AND #4A	578-0248		41B of 61

Form E-0286-00

PERKIN ELMER
Electro-Optical Division, Norwalk, Connecticut

UNIT A 2A9 - P1
TERMINATION
UNIT B 2A10 - P1
UNIT "B" CABLE CONN

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
2A9P1-18	ALL #22		2A10-P1-18	
28			28	
29	SHIELD		29	
30			30	HEATER TEMP BLOCK
19			19	
20	SHIELD		20	
21			21	AMBIENT TEMP BLOCK
31			31	
32	SHIELD		32	
33			33	DETECTOR TEMP BLOCK
22			22	
23	SHIELD		23	
24			24	RADIOMETER - BLOCK
34			34	
35	SHIELD		35	
36			36	$2F_1$ - LOW GAIN - BLOCK
25			25	
26	SHIELD		26	
1			1	F_1 - LOW GAIN - BLOCK
9			9	
10	SHIELD		10	
4			4	F_1 - HI GAIN - BLOCK
12			12	0 - VOLTS - BLOCK
13	SHIELD		13	
11			11	
2			2	
3	SHIELD		3	
7			7	
15			15	
16	SHIELD		16	
17			17	
18			18	
14			14	
5			5	
6	SHIELD		6	
27			27	
28			28	
50			50	
38			38	
51			51	
39			39	
40	SHIELD		40	
60			60	
48			48	
49	SHIELD		49	
62			62	
70			70	
71	SHIELD		71	
72			72	
63			63	
64	SHIELD			

TITLE
SYSTEM #2 ONLY
SEE 42A FOR #1

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PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

UNIT A DP2 - TB1
TERMINATION
UNIT B
UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
DP2-TB1-1A				
1C				
2A	JP2-J10-N	2A9-P1-55		10 FPS MOTOR
2C	N	54		10 FPS MOTOR
3A	d	2A9-P1-59		CALIB LAMP
3C	u			
4A	AH	2A9-P1-62		115V 400 CPS® A
4C	c	2A9-P1-60		CALIB LAMP
5A				
5C				
6A	a	2A9-P1-49		30 FPS MOTOR
6C	a	48		30 FPS MOTOR
7A	m	2A9-P1-68		NEUTRAL
7C	b	67		NEUTRAL
8A	R	73		HIM
8C	v	72		SHUTTER CORK LOOP
9A	AF	65		NEUTRAL
9C	Y	64		4A-C 400 CPS SERVO PWR
10A	AA			Ter Gnd
10C	S			Ter Gnd
11A	D	2A8-P3-44		Red #1 115V A.C. MTR
11C	C	43		Red #1 115V A.C. R
12A	H	47		#2 PTR
12C	N	46		Red #2 115V A.C.
13A	V			
13C	L			Ter Gnd
14A	Y			
14C	X			
15A	r	2A9-P2-64		+180 V D.C. BLOCK
15C	f	63		0 VOLTS/180V/360V/ BLOCK
16A	b	77		SPARE
16C	B	66		+360V D.C. - BLOCK
17A	AB	71		THERMISTOR CTR - BLOCK
17C	AP	70		THERMISTOR - BLOCK
18A	EC	74		COOLER - BLOCK
18C	AB	73		COOLER REV - BLOCK
19A	AH			Ter Gnd
19C	AY			Ter Gnd
20A	AH	2A4-P3-41		Cam Ctn (A)
20C	AV	2A4-P3-40		Cam Motor 115V (A)
21A	AJ	2A4-P3-43		Future 6C 115V (A)
21C	AC	2A4-P3-36		Future 9B 115V (A)
22A	AH			Ter Gnd
22C	AY			Ter Gnd
23A	BP	2A4-P3-38	2A3-P3-12	Cam Ctn (B)
23C	BK	2A4-P3-37	2A3-P3-13	Cam Motor 115V (B)
24A	AK			Ret Chg/Ne (Ter Gnd)
24C	AC			Filter Mtr Ctn (Ter Gnd)
25A	[illegible]	2A8-P2-3		Bkp (Gnd)
25C	JP2-J1-[illegible]	2A8-P1-1		[illegible]

TITLE

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FORM 8-0282-00

PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

UNIT "A" CABLE CONN

UNIT A DP2-TB2
TERMINATION
UNIT B
UNIT "B" CABLE CONN

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
DP2-TB2-1A	(P2-13)	2A9-P2-2		#1 Rtn
1C	A	1		Test Sig #1
2A	R	5		#2 Rtn
2C	H	4		Test Sig #2
3A	K	8		Res Rtn
3C	J	7		Test Resolver Out
4A	e	11		Quad Rtn
4C	E	10		Test Res Out Quad
5A	m	14		Tach Rtn
5C	b	2A9-P2-13		Test Tach Out
6A	S			Ter Gnd
6C	v			Ter Gnd
7A	AR	2A9-P2-20		#1 Rtn
7C	K	19		Sig #1 Out
8A	AA	23		#2 Rtn
8C	s	22		Sig #2 Out
9A	d	17		-28 V D.C.
9C	u	25		+28 V D.C.
10A	AN			Ter Gnd
10C	g			Ter Gnd
11A	D	2A9-P2-18		0-100V D.C. Var x #1 Sig Lev
11C	G	2A9-P2-9		0-100V D.C. Var x #2 Sig Lev
12A	N	DP2-TB2-45A		JUMPERS See Pg 2
12C	R	DP2-TB2-45C		JUMPERS See Pg 2
13A	V	DP2-TB2-46A		JUMPERS See Pg 2
13C	L	DP2-TB2-46C		JUMPERS See Pg 2
14A	Y			
14C	X			
15A	c			
15C	f			
16A	n			
16C	g			
17A	AB			
17C	AF			Ter Gnd
18A	AC			
18C	AS			
19A	AK			
19C	AC			
20A	AV			
20C	M			
21A	AH			
21C	AT			
22A	AJ			
22C	AV			
23A	AK	3A3-P3-12		
23C	BJ	3A3-P3-13		
24A	AE			
24C	AV			
25A	BH			
25C	BT			

TITLE

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PERKIN-ELMER
Electro-Optical Division, Norwalk, Connecticut

UNIT A DP2 - TB2
TERMINATION
UNIT B
UNIT "B" CABLE CONN.

UNIT "A" CABLE CONN.

FROM UNIT A TERM NO.	WIRE NO. AWG	WIRE COLOR	TO UNIT B TERM NO.	FUNCTION
DP2-XTB2-2AA	JP2-13-CD			
26A		BV		
27A		CH		
27B		CL		
28A		CK		
28B		CR		Ter Gnd
29A		CH		
29B		BS		
30A		BX		
30B		BM		
31A	JP2-18-BA	2A9-P2-30		Narrow Field Control
31B		AZ	29	Wide Field Control
32A		a		SPARE (Ter Gnd)
32B		b		
33A		BV	2A9-P2-36	Sync Rtn
33C		BU	35	In Phase Sync
34A		CM	40	Quad Rtn
34C		CL	39	Quad Phase Sync
35A		CF		
35C		CE		Ter Gnd
36A		CN		
36B		BC	2A9-P2-41	B+
37A		BD	43	B-
37B		BE	45	0V
38A		BH	49	600 Rtn
38B		BF	47	Control B+ 600V
39A		BS	53	1200 Rtn
39B		BP	52	Control B+ 1200V
40A		BY	57	Indicator
40B		BZ	55	Indicator
A1A		CB		SPARE (Ter Gnd)
A1B		CA		
A2A		CJ		Ter Gnd
A2B		CN		
A3A				
A3B		BR		Ter Gnd
A4A				
A4B				
A5A	DP2-XTB2-12A	A5B		
A5B	DP2-XTB2-12C	A5D		
A6A	DP2-XTB2-13A	A6B		
A6B	DP2-XTB2-13C	A6D		
A7A				
A7B				
A8A				
A8B				
A9A				
A9B				

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SECTION II

DALMO-VICTOR AC RADIOMETER

2.1 INTRODUCTION

Perkin-Elmer's efforts in the integration of the AC Radiometer in Project GLOW at the Salinas Peak Installation, White Sands Missile Range (WSMR), New Mexico, included:

2.1.1 Preliminary liaison with Dalmo-Victor personnel on electrical and mechanical specifications prior to installation.

2.1.2 Construction of necessary cabling to meet interface requirements.

2.1.3 Rewiring of the GLOW Instrument Van and modified Nike Ajax tracking pedestal.

2.1.4 Installation of the AC Radiometer and rebalancing of the tracking platform.

2.1.5 Installation of the Radiometer electronics and recording equipment in the GLOW Instrument Van.

2.1.6 Assisting Dalmo-Victor personnel in System checkout and boresighting.

2.1.7 Assisting Dalmo-Victor personnel during pre-mission checkout in utilization of the GLOW Systems Target Board and Calibration facilities.

2.2 SUMMARY

2.2.1 Installation

The required electrical interface wiring of the GLOW Instrument Van and Nike Ajax tracking pedestal was initiated at the Salinas Site during the latter weeks of June 1965.

Mounting of the AC Radiometer, rebalancing of the tracking platform, and system checkout were concluded by mid-July 1965.

Figure 4 shows the GLOW System installation at Salinas Peak.

2.2.2 Operation

Operation of the Dalmo-Victor Radiometer was accomplished during required missions by the technical staff personnel of the Dalmo-Victor Corporation. This period extended from mid-July 1965 to early January 1966.

Evaluation of any acquired data and direct operation of the Radiometer was the responsibility of the Dalmo-Victor technical staff.

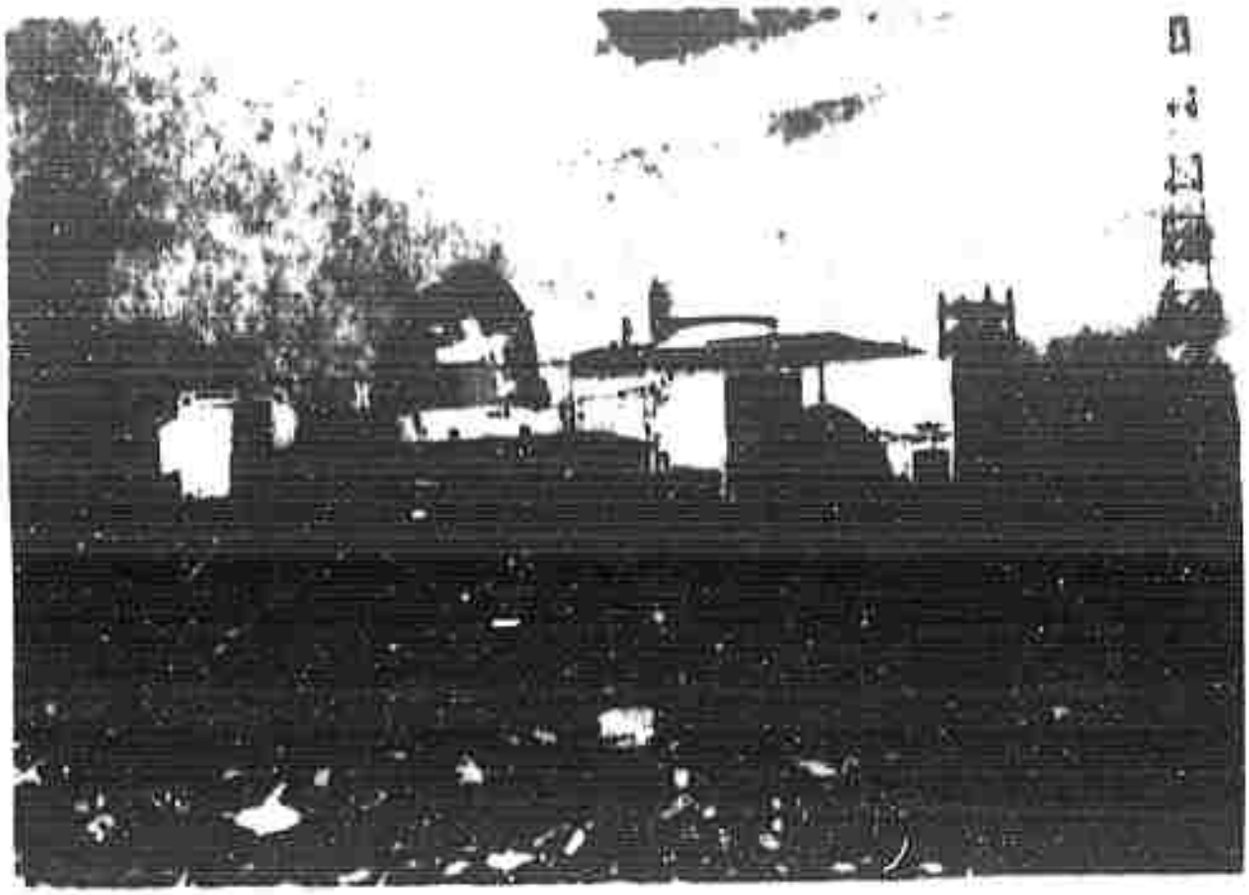

Figure 4 GLOW Optical Receiver Instrument Located at Stallion Solar Power Plant, White Sands Missile Range, New Mexico

2.2.3 Equipment Removal

The Delmo-Victor Radiometer was removed from GLOW System I before transfer of the GLOW system from Salinas to Sole-Site in February 1966.

SECTION III

IMAGE ORTHICON TELEVISION AND TRACKING GATE SYSTEM

3.1 INTRODUCTION

In order to improve the automatic tracking and visual acq 'sition capabilities of the GLOW System, provision was made for the integration of the GLINT Image Orthicon Tracking System.

3.2 BASIC EQUIPMENT DESCRIPTION

The GLINT System utilizes a 12-inch, f3 cassegrain configuration (lens) with a 1.8 x 2.4 degree field of view, in conjunction with a General Electric TE-17A chain with automatic beam control and an S-20 image orthicon tube.

This unit with its integrated boresighting base is mounted on the GLOW tracking platform.

The interface cabling connects the camera to the GLOW Instrument Van, where the IO video output is displayed on the C scope monitor; incorporated are two expanded A scopes (display recording monitors) which present radiometric data of the two targets tracked by operator B (these have been selected by the use of the Bendix Gates). The GLOW System video monitor at the main console displays the tracked target.

In addition, provisions are included for the photographic recording of the C and A scope presentation with a synchronised 3 mm cine-camera.

The tracking system consists of a Bendix four-gate tracking circuit with manual (joystick) or automatic tracking of up to four gates. The control or error signal from any one gate is used to control the GLOW pedestal as selected by mission requirements.

3.3 INTEGRATION AND INSTALLATION

Preliminary interface requirements (wiring and mechanical layouts, construction of cabling) were accomplished by Perkin-Elmer's field systems group at Norwalk, Connecticut.

Actual wiring was initiated by the Perkin-Elmer field crew in November 1965 at the Salinas Site and continued after the GLOW System transfer to Sole-Site.

Completion of the installation by the field crew was concluded in March 1966.

The following tasks were performed in this interface.

3.3.1 Preliminary interface wiring and mechanical requirements.

3.3.2 Construction of necessary cabling.

3.3.3 Rewiring of the Instrument Van.

3.3.4 Installation of the TV camera and optics on the GLOW pedestal platform.

3.3.5 Rebalancing of the GLOW pedestal platform.

3.3.6 Installation of the TV rack and console in the Instrument Van.

3.3.7 Boresighting of the TV camera.

3.3.8 Closing, optimization, and evaluation of the TV tracker servo loop.

During the checkout and evaluation phase of the installation, the field crew was ably assisted by members of the General Electric Company technical staff responsible for the IO system.

3.4 SUMMARY

The preliminary operation of the Image Orthicon System showed that the visual acquisition capabilities of Project GLOW were significantly advanced.

Perkin-Elmer's contract at WSMR for GLOW System I installation was concluded on April 1, 1966, before the tracking capabilities could be fully evaluated.

Under a contractual extension, two Perkin-Elmer employees were at WSMR until July 1, 1966, and confirmed the improved tracking capabilities indicated previously by the preliminary evaluation.

This equipment is still in active use at the GLOW Solo-Site Installation, WSMR.